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(54) **BALLISTIC REVERSIBLE SUPERCONDUCTING MEMORY ELEMENT**

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(57) **ABSTRACT**

A reversible memory element is provided. The reversible memory element comprises a reversible memory cell comprising a Josephson junction and a passive inductor. A ballistic interconnect is connected to the reversible memory cell by a bidirectional input/output port. A polarized input fluxon propagating along the ballistic interconnect exchanges polarity with a stationary stored fluxon in the reversible memory cell in response to the input fluxon reflecting off the reversible memory cell.

